



Thornccliffe Association
Curriculum
Age 5 - 8



RoboThink is an international leader in STEM education, offering fun and engaging programs in **robotics, coding, and engineering** for children of all ages. Our hands-on curriculum is designed to spark curiosity, foster creativity, and build critical problem-solving skills.

Through guided activities, students learn to **design, build, and program robots** while developing teamwork, logical thinking, and confidence. Each session is structured to balance **learning and play**, ensuring that children not only gain valuable technical knowledge but also have fun throughout the process.

RoboThink programs are trusted by schools and learning centers worldwide and are carefully tailored to meet the needs of different age groups, ensuring that every student is challenged at the right level.

Our mission is simple: to inspire the next generation of **engineers, innovators, and problem solvers** through exciting, hands-on STEM experiences.



Program Description

Our Animal Robotics & Biomimicry STEM Program introduces students to the fascinating concept of engineering inspired by nature. Each week, students learn how animals move, adapt, and survive, then use those ideas to design and build mechanical models that mimic real biological motion.

Students develop problem-solving, creativity, and teamwork skills while building robotic animals and vehicles that replicate natural movement and behaviors. Guided lessons make engineering fun and accessible, helping students understand how scientists and engineers study animals to invent new machines, robots, and technologies.

Weekly Breakdown for Parents

Week 1 – Baby Elephant

Students build a model inspired by the strength and movement of an elephant. They explore mechanical lifting, trunk motion, and how weight is distributed for stability and support.

Week 2 – Ghost Crab

Students design a crab-like robot with side-walking motion. They learn about joint structure, leg coordination, balance, and how animals move efficiently on sand and uneven surfaces.

Week 3 – Lizard Car

Students build a vehicle inspired by lizard body movement and tail balance mechanisms. They explore how flexible bodies and rapid leg motion allow animals to move fast and turn sharply.



Week 4 – Dog Car

Students engineer a dog-inspired car model, learning about mobility, gait patterns, steering control, and how animals adapt movement for speed and direction changes.

Week 5 – Seagull

Students build a wing-based model inspired by the flight of seagulls. They explore aerodynamics, wing shape, lift, and how birds glide and change direction in the air.

Week 6 – Wand-Following Alicorn & Chariot

Students apply everything they've learned to build a magical wand-controlled alicorn (winged horse) pulling a chariot. They experiment with sensors, autonomous movement, creativity, and customization, then proudly present their projects.

What Students Gain

- Understanding of biomimicry—how nature inspires real engineering solutions
- Hands-on robotics and mechanical building skills
- Improved critical thinking and design problem-solving
- Creativity, innovation, and confidence through open-ended projects
- Teamwork, collaboration, communication, and presentation skills

Robothink Schedule

Week	Activity
Week 1	Baby Elephant
Week 2	Ghost Crab
Week 3	Lizard Car
Week 4	Dog Car
Week 5	Seagull
Week 6	Wand Following Alicorn and Chariot

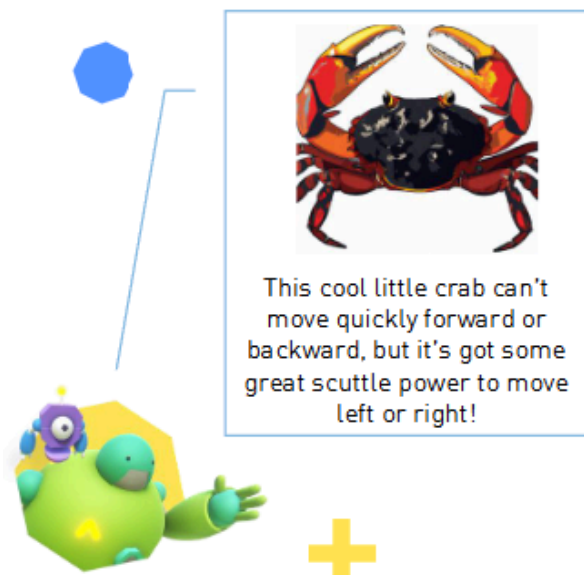
ROBOPETZ

LESSON 1: BABY ELEPHANT



ROBOPETZ

LESSON 2: GHOST CRAB



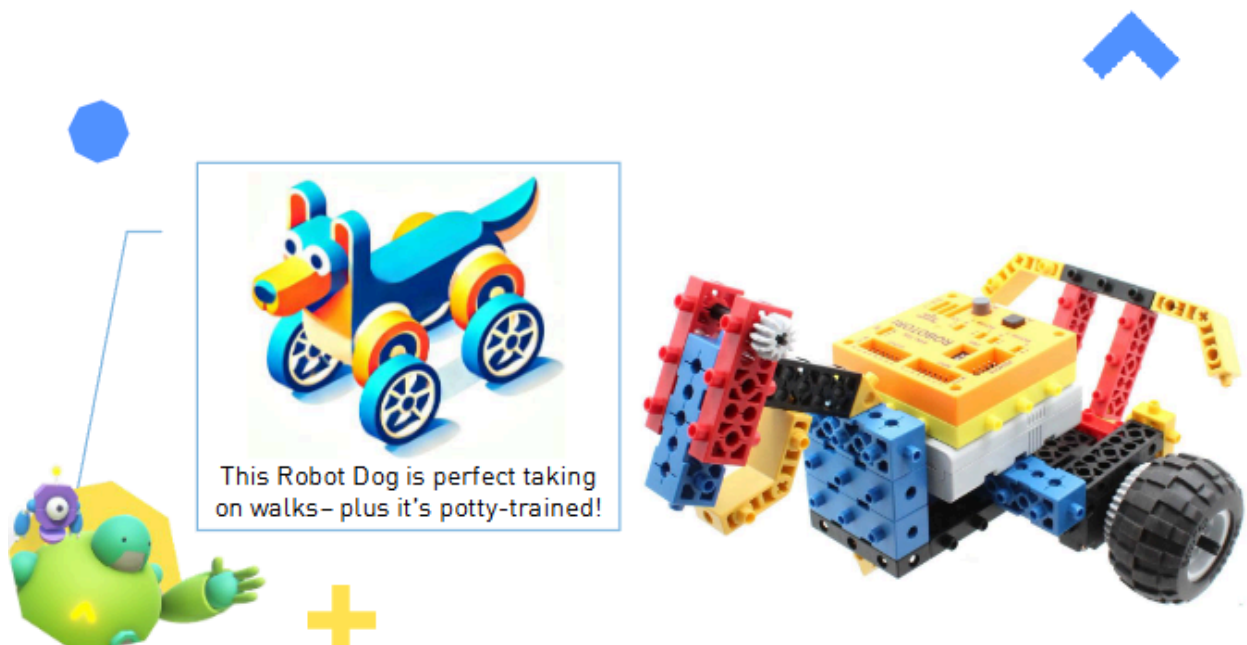
ROBOPETZ

LESSON 3: LIZARD CAR



ROBOPETZ

LESSON 4: DOG CAR



ROBOPETZ

LESSON 5: SEAGULL



ROBOPETZ

LESSON 6: WAND FOLLOWING ALICORN AND CHARIOT



